

**AN
UNUSUAL
BOOK**

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FOREWORD

We offer this booklet to the profession in the hope that it will help to make easier some of the daily problems which confront both practitioner and technician.

It is largely made up of various practical hints, and while many of them may already be known to you, we feel sure that among these pages you will find something helpful.

For the student it is rich with those snippets of information which are usually so hard to come by.



S. S. White "Natural" Teeth in texture, translucence and colour, together with the beautiful forms of the teeth, provide for an æsthetic restoration.

The porcelain is extremely fine ground and very strong. The "pressed method" by which they are made obviates any risk of a line of demarkation between the colourings.

After years of research our chemists evolved a new range of colours founded on the discovery that orange and not yellow is the basic colour of live teeth.

The gold-incased pins, which are soldered to a precious metal anchorage, are tested *individually* for strength.

"Natural" Teeth are made in a large range of patterns and colours. Pin incisors and diatomic posteriors.

Write for a copy of the "Natural" Teeth booklet. Free, of course.

S. S. WHITE

"NATURAL" TEETH

For æsthetic restorations

HINTS

The best way to set up the teeth for an edentulous upper and lower is to mount the six upper incisors first; then to roughly set up the upper bicuspid and molars, paying due regard to the ridge and occlusal plane. Next, set up the lower second bicuspid and first molars in their correct relationship to the uppers, add the first bicuspid and second molars and, finally, the lower incisors. By this method, if correctly formed teeth are used, the need for grinding is minimised.

Setting-up

To repolish teeth after grinding, rub well with coarse and fine emery cloth and polish on a lathe, using a felt wheel, clean pumice powder and water. Alternatively, use putty powder.

Buffing

It is most essential to pay strict attention to the vulcanising instructions included in every box of dental rubber.

Vulcanising

As neither pressure gauges nor thermometers are absolutely dependable, it is always advisable to use both; to check one against the other.

Gauges

Porosity in thick dentures always occurs at the *beginning* of vulcanisation, therefore, raise temperature *very* slowly.

Porosity

Flask edentulous cases upside down unless they are very undercut.

Flasking

Discard all ill-fitting or damaged flasks. It is false economy as trouble frequently ensues.

Flasks

Avoid using too much pressure with a flask press. Much damage is done in this way.

Packing

Packing is one of the most important details in the construction of a denture and it is not advisable to leave it to juniors.

Packing



BOW-SPRING

Thin, springy plates of exceptional strength can be achieved by using S. S. White Bowspring Rubber. It was manufactured specially in response to various requests for a rubber with more than usual strength with a full range of beautiful colours.

In the preparation of this rubber great care is exercised to ensure that it shall be free from grit and other extraneous matter which so frequently mars an otherwise perfect finish. As is usual with S. S. White Rubbers, shrinkage is negligible.

S. S. WHITE BOWSPRING RUBBER

Beautiful and Durable

HINTS—*continued*

Before flasking waxed cases for packing, place them in a basin and cover with clean, cold water. This will eliminate the possibility of blow-holes.

Flasking

A stronger denture will result if the palate is packed in small pieces and not in one large piece. Rubber, like wood, has a grain that runs in the direction it has been rolled, and this should be remembered during packing.

Packing

To ascertain the carat of gold, test a freshly scraped portion of metal with a drop of strong nitric acid.

Acid Tests

Gold 24 ct. to 18 ct.	No action
„ 16 ct.	Will turn a brownish colour
„ 14 ct.	A deeper brown

and the lower the carat the deeper the colour.

The same test applied to other metals will turn

Silver a Greyish colour

German Silver a Greyish Green

Victoria Metal and

Brass a Pale Green

Nickel Black

Hydrochloric acid is useful for dissolving borax or removing flux:—Two parts hydrochloric acid (30-35 per cent) to four or five parts water. Store in cool place using glass stoppered bottle.

Acids

Sulphuric acid is used for removing oxidation and for all general purposes:—Two parts sulphuric acid (20-25 per cent) to six or eight parts water. The acid must be added slowly to the water.

Acids

German silver is cleaned by heating to redness and plunging into hydrochloric acid and then into a solution of sodi bic.

Acids



In all restorative work the dentist plans to produce results that will endure and will restore facial beauty. S. S. White Filling Porcelain was developed to fulfil these two essential requirements.

It has more permanence than any other similar material. It will endure stress and salivary action. As to its æsthetic value, no other like material approaches it in its resemblance to the human tooth.

Look at this material from any angle, subject it to any test, and the answer is a filling material possessing marvellous æsthetic value and permanence.

Write for Filling Porcelain Book, which is of interest quite apart from its specific bearing upon the product which forms its subject.

S. S. WHITE FILLING PORCELAIN

The Translucent Plastic

HINTS—*continued*

Burns from sulphuric, nitric, hydrochloric, etc., should be washed with water and any alkali that may be to hand. Alternatively, linseed oil, soda or seltza water from a syphon can be used.

Burns—Acid

Hydrofluoric acid used for etching porcelain inlays and removing fused investment. This is extremely corrosive and must be kept in a gutta percha bottle. If the skin is touched with hydrofluoric acid, wash immediately with a 5 per cent solution of ammonia.

Acids

Nitric acid (30-35 per cent) is used for removing base metals from gold. It is explosive with alcohol or glycerine.

Acids

To remove mercury from gold rings, etc., make article cherry red in bunsen flame and immerse in hydrochloric acid.

*Mercury
from gold*

To remove facings cemented on gold, boil for a few minutes in hydrochloric or nitric acid. This does not apply when S. S. White Kryptex has been used. In the latter case boil in ammonia.

*Remove
facings*

The best separating medium for plaster impressions is Gilbert Imperial Varnish, which also leaves a highly glossy surface.

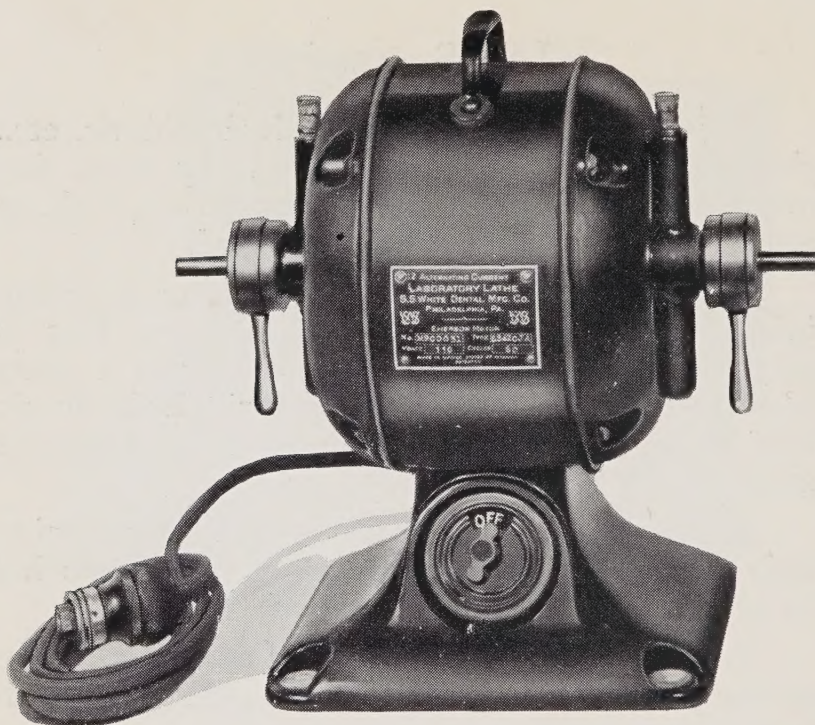
Plaster

To hasten setting of plaster use warm water, common salt or alum. To retard setting, use whiting or marshmallow root. In all cases experiment first with an average size pinch.

Plaster

Teeth standing alone or to which a clasp is to be fitted should be strengthened with a pin placed in the impression before pouring. For composition, warm pin and stick in; for plaster, tap pin in with riveting hammer.

Plaster



Plenty of power for all laboratory purposes and assurance of long service are the chief considerations in a laboratory lathe. The S. S. White Lathe is built upon these ideas.

The motor is of the enclosed type, with all internal parts protected against water and dust. There is nothing to get out of order.

A very good feature of this lathe is the design of the base, which allows plenty of working space under the chucks. There is a very simple chuck releasing device attached on each end of the motor.

Good appearance and durable finish are only incidental in this lathe. Its real beauty is in the motor, as many years of service will show.

S. S. WHITE LABORATORY LATHE Two Speeds

A product of The House of White, Philadelphia, U.S.A.

HINTS—*continued*

As blood rots plaster, always wash impressions in running water. *Plaster*

A model soaked in a saturated solution of boracic acid (use hot water) and 3 per cent strong liquid ammonia and afterwards coated with boiled alum, will become marble hard. *Plaster*

If more than one mixing slab is kept in use and the used one is left in cold water for a while, the cement will be far easier to remove. *Cement from slabs*

It is always very necessary to pay due regard to the time of spatulation recommended by the manufacturers of filling materials to obtain the correct result. *Spatulation*

Borax used as a flux runs to the bottom of the molten gold, and if in excess, may block the sprue hole. *Casting flux*

Casting by the one-sprue method, where applicable, is always indicated, as it lessens the likelihood of porosity. *Gold casting*

Always use as short a sprue as possible. *Sprues*

Always make ingots red hot before placing on casting ring. This conserves heat inasmuch as less time is necessary to melt than if it was cold. *Gold casting*

When swaging a plate with a deep palate it is often advantageous to make a lead counter to fit the palate only; *not* extending over the ridge. *Swaging*

Always pickle the plate before annealing, lest base metal is melted into the gold. Use nitric acid 30 to 35 per cent. *Pickling*

To ascertain the amount of gold required for a casting, weigh the wax shape and multiply by 32. This allows for excess ignot. *Casting gold*

HINTS—*continued*

APPROXIMATE MELTING POINT AND SPECIFIC GRAVITY OF METAL.

<i>Melting Points</i>			Degrees	Degrees	Sp. Gr.
		Symbol	Fahr.	Cent.	
	Aluminium	... Al	1157	625	2·6
	Brass ...	... —	1689	1020	8·5
	Copper ...	... Cu	1929	1054	8·9
	Gold (Fine)	... Au	1942	1061	19·3
	Lead ...	... Pb	617	325	11·4
	Mercury ...	... Hg	40	40	13·6
	Palladium ...	... Pd	2732	1500	11·5
	Platinum ...	... Pt	3227	1775	21·5
	Silver ...	... Ag	1904	1040	10·5
	Tin ...	... Sn	450	232	7·2
	Zinc ...	... Zn	779	415	7·0

APPROXIMATE GAUGE EQUIVALENTS.

*Gauge
Equivalents*

Plate			Wire, Round		
British Dental Standard	Ameri- can Standard	Decimal Inch	British Dental Standard	Ameri- can Standard	Decimal Inch
1	40	·0031	A	19	·0358
2	36	·005	B	18	·0403
—	34	·0066	1	—	·048
3	—	·007	—	16	·0508
—	33	·0070	2	—	·0551
—	31	·0089	3	15	·0570
4	—	·01	—	14	·0640
—	30	·0100	4	—	·063
—	28	·0126	—	13	·0719
5	—	·013	5	11	·0907
—	27	·0141			
6	—	·0158			
—	26	·0159	Wire, Half-round		
—	25	·0179			
7	—	·0196			
—	24	·0201			
8	—	·022			
—	23	·0225			
9	22	·024	6	14	·066
			7	13	·076
			8	12	·083

HINTS—*continued*APPROXIMATE TEMPERATURE CORRESPONDING WITH
LB. PRESSURE TO THE SQUARE INCH.

Absolute Pressure in lb. per sq. in.		Approx. Temperature in degrees Fahrenheit	Absolute Pressure in lb. per sq. in.		Approx. Temperature in degrees Fahrenheit	<i>lb. pressure to inches</i>
1	...	102	50	...	281	
5	...	162	60	...	292	
10	...	193	70	...	303	
15	...	213	80	...	312	
20	...	228	90	...	320	
25	...	240	100	...	328	
30	...	250	110	...	334	
35	...	259	120	...	341	
40	...	267	130	...	347	
45	...	274	140	...	353	

To ascertain the Centigrade equivalent of degrees Fahrenheit and *vice versa*, *Temperature
conversion*

Fahrenheit to Centigrade .. $^{\circ}\text{F} - 32 \div 1.8$

Centigrade to Fahrenheit .. $^{\circ}\text{C} \times 1.8 + 32$

For gold plating without a battery, make a *Gilding*
solution comprising—

Gold Chloride	15 mins.
Potassium Cyanide	6 drachms 15 mins.
Potassium Hydrate	2 drachms 30 mins.
Sodium Phosphate	4 drachms
Distilled Water	2 pints.

Boil the solution in a porcelain dish and suspend the article in it by means of a thick aluminium wire and keep on the move for one or two minutes. Wash, dry and polish. It is essential that the article to be treated is first thoroughly clean and free from grease.



You may aim to be a master worker in gold, but you cannot acquire the sure skill that moves unerringly to the desired end unless you use golds that work with you. Whether in casting or soldering, your gold must have a certainty of action under the flame that you can depend upon.

S. S. White Golds give you this certainty. Every one of them is standardised as to content of gold and alloying metals—with these as free from impurities as the gold itself. In each you get the ideal reaction of that particular proportioning of gold and alloy. The reaction is always the same; you know precisely what to expect at each step; you go on to the next in perfect confidence that the expected will happen. And it does; the golds work with you.

Write for a copy of our booklet, "Gold for Dentistry," which gives much useful information on gold work.

S. S. WHITE
STANDARD GOLDS
for every dental need

HINTS—*continued*

To make soft solder, use two parts tin, one part lead. Pour into clean sand or on stone. *Soft solder
—to make*

To remove broken or jammed needles from the nozzle of a hypodermic syringe, hold in a bunsen flame until the lead button is melted. The needle will then push out quite easily. *Broken
needles*

Old corks make good pumice polishing cones and can easily be cut to any shape. *Polishing*

Before taking an impression the use of an astringent mouth wash (Phillip's Magnesia or a salt solution) will be found advantageous. *Impressions*

An impression is more easily removed from the mouth if the patient first closes the lips and blows out the cheeks. *Impressions*

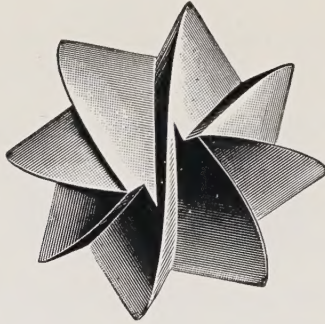
It is advisable to use sulphur for the cementation of the tube teeth to removable restorations. *Tube; Teeth
—fixation;*

In soldering never use pumice powder as an investing medium as it sometimes melts under the great heat. The best investing material is plaster of Paris and silver sand. Use slightly more sand than plaster. *Investing*

If small holes in a gold plate are to be filled in, pack first with gold-filling cylinders to facilitate flowing of solder. *Soldering*

A lead pencil mark drawn round the metal will successfully prevent solder from running where it is not wanted. *Solder
barrier*

Insufficiently hot gold means an absence of marginal detail. Gold too hot results in a rough cast. The cast should be made when the gold is "rolling" in the crucible. *Correct
fluidity*



It requires more than steel and machinery to produce good burs. To excel, it requires engineering skill, expert knowledge born of long experience, technical ability of trained operators, superior raw materials, proper manufacturing facilities, and, underlying all this, fidelity to the principle that only in "quality" is true economy to be found.

This specification exactly covers the manufacture of Revelation Burs and is the secret of their phenomenal popularity over a period of thirty-seven years. It's their clean and rapid cutting, the elimination of pain and the longer service, that are remembered long after the price is forgotten.

S. S. WHITE
REVELATION BURS

Are stoned

HINTS—*continued*

When gold has been used before, it is important that one-third to one-half new gold should be added.

*Gold—
renew*

Cast clasps should never be plunged into water while hot. Wait until the ring can be handled and then cut cast free from investment.

Cast clasps

Investment left cast overnight is liable to crack. The ring should be put on to burn out within an hour of investing.

Investing

Always place ring crucible downwards when burning out wax, and after wax has been eliminated turn several times during heating up.

Burning out

To ease a denture in one definite place, locate the sore spot and mark gently with a *very soft* indelible pencil. Insert plate, remove and cut away where pencil mark shows.

*Denture—
to ease*

Swaged tin plates ensure an equi-thick and stronger palate and a polishing plate will save a great deal of time in finishing. If using a metal die and counter-die for striking tin plates, use lead and lead. Paint a thin solution of whiting on die and pour counter-die as cool as possible. Alternatively, when the die is cold, coat with lamp black by holding in candle or lamp flame.

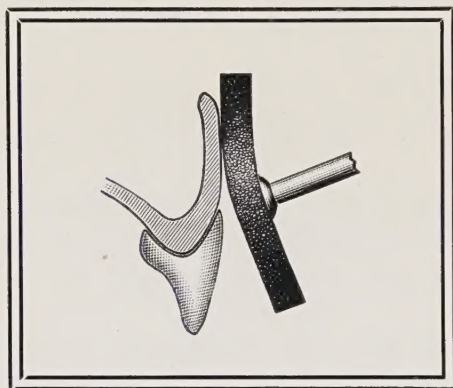
Tin plates

To clean impression trays from particles of impression compound, boil in borax and water.

*Trays—
cleaning*

To clean workroom files make them hot in a bunsen flame, place a little oil on both sides of file, heat again and brush vigorously with a wire file cleaner.

*Files—
cleaning*



These wheels are very convenient and efficient for imparting a finish to vulcanite dentures and cast gold restorations. On vulcanite dentures, prior to the final polishing, they will cut faster than sandpaper and eliminate its use entirely. On gold castings they are especially recommended for finishing after a general roughening down with the carborundum stone. They do not clog, do not groove, and will offer no injury to porcelain teeth. The wheels will curve over and around all raised surfaces and enter all depressions. A knife or rounded edge can be given the wheel by running against an old file.

Write for a sample wheel to test for yourself.

$\frac{5}{8}$ in. and $\frac{7}{8}$ in. diameters. $\frac{1}{8}$ in. thick.

S. S. WHITE
FLEXIBLE
ABRASIVE WHEELS

For a quicker and better finish

HINTS—*continued*

To make casting sand bind better, moisten with one part glycerine to two parts water. *Casting sand*

Casting sand must always be kept free from salt. *Casting sand*

To clean zinc stir a small quantity of sal-ammoniac crystals into molten metal and scoop off dross. *Zinc—to clean*
This must be done in the open air owing to the obnoxious fumes which are given off.

Babbitt metal is better for struck work than zinc, inasmuch as it does not shrink and is considerably harder. *Dies*

Always ream out the hole of a new lathe brush with an old file and screw it on to the chuck. If you run it on you will probably split it. *Polishing*

Keep a piece of yellow soap in the pumice pan and frequently hold against revolving brush. It helps the pumice to adhere to the brush and greatly speeds up polish. *Polishing*

Sandpaper will be made more effective if the piece to be used is first passed lightly over the bunsen flame. This disperses the collected moisture and hardens the sand paper. *Sandpaper*

To clean the inside of clasps on dentures it is a good idea to attach a piece of string to the side of the lathe or in the vicinity of same, then during polishing to run a pumice covered hand down string. Thread string through the clasp to be cleaned and rub the denture up and down. This speedily removes any oxidation, etc., yet will not disturb the fit. *Polishing*



S. S. White One-piece Aluminium Impression Trays and Exact Impression Compound are all that is required for taking a perfect impression of any and every mouth. They take the guessing out of it, too.

The impression trays are light but very strong and have no rivets or soldered seams to come loose or gather dirt.

Exact Impression Compound is an ideal quick-setting material which softens at a lower temperature than is usual. It gives full detail and does not shrink or contract.

We strongly advocate the use of Exact Impression Compound for all muscle trimming techniques; it's easier to soften—quicker to set.

S. S. WHITE IMPRESSION MATERIALS

Create a good impression

HINTS—*continued*

When soldering is to be done to a metal plate that has the posteriors mounted on vulcanite, it is advisable to solder with a mixture of nitrous oxide and coal gas. With this and the correct blow-pipe, a needle flame of intense heat can be applied and concentrated in a very small area. Speed is, of course, essential. The vulcanite can be invested in sand which should be kept moist from a water bottle with a sprinkler top. If investment is used, cut a little crucible in same over the vulcanite and keep full of water. A slice of raw potato kept *in situ* with wet sand is handy for preserving vulcanite from the heat. Judicious use of a nitrous oxide blow-pipe can save hours of work and enables some repairs to be done "while you wait." If the vulcanite is near the place to be soldered, take necessary data of bite, etc., by plaster overcasts, and if it is near as half an inch—take a risk. You are no worse off if the vulcanite does burn and you have to replace it all.

*Gold and
Vulcanite
repairs*

A quick repair can be effected in the case of a tooth being broken on a vulcanite denture, in this way:—Slightly warm and pull out pins with pliers and drill vulcanite away as deeply as is safe and to the *exact margin left by the old tooth*. Roughen and undercut cavity and obtain necessary tooth, if possible, of same pattern. Thoroughly clean and dry cavity and tooth. Fill cavity and smear pins with cement and firmly push tooth in place. If care is exercised such a repair is not only very strong but cannot be detected.

*Quick
repair—
Teeth on
Vulcanite
Plate*

To quickly replace broken incisors on a metal plate, first cut off old pins and drill through remains of same. Countersink the holes on the tongue side,

*Quick
repair—
Teeth on
Metal Plate*

HINTS—*continued*

insert new tooth with pins, cut to suitable length and very carefully rivet with a small pointed hammer. Place a piece of softened wax on the bench, impress side of tooth in same and keep there while riveting is being done. This will obviate the risk of cracking the tooth. It *can* be further strengthened by the application, with an iron, of the *merest* touch of soft solder.

J We hope this book has proved of interest to you and suggest that it may be useful for future reference.

The S. S. White Co. of Great Britain Ltd.

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Since 1844 — The Standard

